

PURIN, B.[Purins, B.](Riga); TSERA, V.[Cera, V.](Riga); OZOL-KALNIN, G.
[Ozols-Kalnins, G.](Riga)

Electrode potentials of nickel, iron, and copper in the solutions of
nickel electrolyte in the presence of some additions. Vestis Latv
ak no.12:91-96 '60. (EEAI 10:9)

1. Akademiya nauk Latvyskoy SSR, Institut khimii.

(Electrodes) (Nickel) (Iron) (Copper)
(Electrolytes)

OZOL-KALNIN, G.[Ozol-Kalnins, G.](Riga); PURIN, B.[Purins, B.](Riga)

Electrolytic deposition of nickel from sulfate electrolytes with
addition of certain organic and inorganic compounds. Vestis Latv ak
no.1:77-86 '61. (EEAI 10:9)

1. Akademiya nauk Latvyskoy SSR, Institut khimii.

(Electrochemistry) (Nickel) (Sulfates) (Electrolytes)

OZOL-KALNIN, G.[Ozol-Kalnins, G.](Riga); PURIN, B.[Purins, B.](Riga)

Effect of alternating current on the electrolytic deposition of nickel. Report I. Electrolytic deposition of nickel sulfate electrolytes with additions of certain organic and inorganic compounds and with superposition of alternating current on direct current. (To be contd)
Vestis Latv ak no.4:73-76 '61. (EEAI 10:9)

1. Akademiya nauk Latviyskoy SSR, Institut khimii.

(Electric currents) (Nickel) (Nickel sulfates)

OZOL-KALNIN, G.[Ozol-Kalnins, G.]; PURIN, B.[Purins, B.]

Effect of alternating current on the electrolytic deposition of nickel.
Report No.2. Polarization in nickel electrolytes with the superposition
of an alternating current on direct current. *Vestis Latv* ak no.5:71-78
'61.

1. Akademiya nauk Latvyskoy SSR, Institut khimii.

25606

S/197/61/000/006/006/007
B104/B201

1.1800

also 1087

X

AUTHORS: Ozol-Kalnins, G., Purin, B.

TITLE: Effect of alternating current upon nickel electrodeposition. Communication 3. Nickel electrodeposition on nickel backings by superposition of an alternating current over the direct current.

PERIODICAL: Akademiya nauk Latvyskoy SSR. Izvestiya, no. 6(167), 1961, 51 - 56

TEXT: Data are given on the effect of the pre-treatment of nickel surfaces upon the binding of electrodeposited nickel layers with the nickel backing. Nickel was electrodeposited on nickeled copper plates which were polished with chromium pastes, with an alternating current superposed on the direct current. The binding of the nickel layer with the nickel backing was tested by bending and filing tests. The nickel layers were 30 - 50 μ thick. The experimental arrangement had been described by the authors in a previous paper. Three electrolytes were used for the experiments (see composition attached). The nickel backings

Card 1/6

25606

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B104/3201

Effect of alternating current ...

were degreased electrolytically by various electrolytes. In the oscillograms shown in Fig. 1 the effect of the different pre-treatments upon the course of the polarization current when switching on is clearly recognizable. In chemical (Curve 1, Fig. 1a) and electrolytic degreasing with direct current (Curve 2, Fig. 1a) and with alternating current (Curve 3, Fig. 1a), the cathode potential displays a strongly negative value. A sharp drop of the negative potential is found when ON - 10 (OP - 10) is added (Curve 4, Fig. 1a). This strong passivation of the nickel surface prevents a sufficiently strong binding between nickel layer and nickel backing even when using alternating current. If, after electrochemical degreasing (without OP - 10 admixture), the nickel backing is etched for five minutes in an HCl solution, the potential will be lowest at the moment of switching on the current (Curve 1, Fig. 1b). In this case, a good binding between nickel backing and nickel layer will be established by electroplating with superposed alternating current. When electroplating with direct current alone, a good binding is obtained up to layer thicknesses of 25 - 30 microns with electrolytes nos. 1 and 2. If the specimens are etched, the results will be worse (Curves 2 and 3, Fig. 1b). Likewise, an electrolytic degreasing with

Card 2/6

25606

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B104/B201

Effect of alternating current ...

OP - 10 admixture proved to be insufficient both with direct current and with alternating current and subsequent 5-minute etching (Curves 2, 3, Fig. 1c). An improvement did not appear until after 10-minute etching (Curve 1, Fig. 1c). The treatment sequence "chemical degreasing - etching - chemical degreasing" proved to be more suitable than the "chemical degreasing - etching" treatment (Curves 1, 2, Fig. 1d). The authors conclude therefrom that, due to surface-active substances, the surface is not completely wetted by water after etching. By superposition of alternating current over the direct current, a good binding of the nickel layer is attained after various surface treatments. If this effect is brought about only by the desorption of surface-active substances through alternating current, it should be sufficient first to work for a brief time with alternating current, and subsequently with direct current. It has been found, however, that a diminution of adsorption binding of surface-active substances can be attained only by superposition of alternating current over the direct current. V. P. Moiseyev and O. S. Popova (Izv. AN SSSR, OKhN, 1956, 20, 641) showed diminution of the voltage by nickel depositions in the initial

Card 3/6

25606

S/197/61/000/006/006/007
B104/B201

Effect of alternating current ...

period, when applying an alternating field, to be a very important factor. The binding of a nickel layer on a nickel backing can thus be increased by activation of the nickel surface and by a diminution of the voltage by nickel depositions. M. I. Morkhov, K. N. Kharlamova, and A. T. Vagrameyan are mentioned. There are 1 figure, 1 table, and 10 references: 6 Soviet-bloc and 4 non-Soviet-bloc. The reference to English-language publications reads as follows: W. W. Sellers et al., Amer. Electroplaters Soc., 1957, 36, 157.

ASSOCIATION: Institut khimii AN Latv. SSR
(Institute of Chemistry, AS Latviyskaya SSR)

SUBMITTED: July 21, 1960

Card 4/6

OZOL-KALNIN, G. [Ozol-Kalnins, G.]; PURIN, B. [Purins, B.]

Electrolytic deposition of nickel from sulfate electrolytes with additives of some organic and inorganic substances. Vestis Latv ak nol.:77-86 '61.

1. Institut khimii AN Latvyskoy SSR.

PURIN, L. V.

PHASE I BOOK EXPLOITATION

SOV/6060

Vargin, V. V., Professor, ed.

Emalirovaniye metallicheskih izdeliy (Enameling of Metal Articles). Moscow, Mashgiz, 1962. 546 p. Errata slip inserted. 7500 copies printed.

Reviewer: A. S. Ragozin, Engineer; Ed.: M. V. Serebryakova, Engineer; Eds. of Publishing House: I. A. Borodulina, A. I. Varkovetskaya, and T. L. Leykina; Tech. Ed.: L. V. Shchetinina; Managing Ed. for Literature on Machinery Manufacture (Leningrad Division, Mashgiz): Ye. P. Naumov, Engineer.

PURPOSE: This book is intended for specialists in enameling, technical personnel of plants, and personnel of scientific research laboratories and institutes. It can also be used by teachers and students of schools of higher education.

COVERAGE: The book provides a brief discussion on raw materials and processes for melting enamels, describes in detail furnaces for melting enamels.

Card 1/4

20

SOV/6060

Enameling of Metal Articles

and offers some recommendations for selection and calculation of furnaces. A special section [Ch. IV, sct. 8] on heat-resistant coatings is included. A flowsheet is given for centralized production of enamels. The properties and preparation of slips are also comprehensively described. The production of new enameled products such as pipelines, architectural and building materials, and aluminum articles is described. Individual chapters were written both by plant personnel and by technical personnel of scientific research institutes and schools of higher education. [See: Table of Contents.] No personalities are mentioned. There are 638 references, mainly Soviet, with many English and some German.

TABLE OF CONTENTS [Abridged]:

3

Foreword

Card 2/4

13

Enameling of Metal Articles

SOV/6060

PART I. ENAMELING TECHNOLOGY

- Ch. I. Raw Materials and Batch Preparation (V. Ya. Senderovich) 5
- Ch. II. Melting of Enamels (V. A. Kuzyak, V. V. Vargin, and V. P. Vaulin) 23
- Ch. III. Grinding of Enamels and Slip Preparation (L. D. Svirskiy and B. Z. Pevzner) 93

PART II. THE TECHNOLOGY OF ENAMELING METAL ARTICLES

- Ch. IV. Enameling of Steel Articles (N. S. Smirnov, N. N. Zelenskiy, Ye. M. Oshurkov, B. Z. Pevzner, Ye. A. Antonova, V. V. Luchinskiy, V. P. Vaulin, L. V. Purin, V. V. Vargin, M. M. Karabachinskaya, A. A. Appen, and V. Ya. Lokshin) 102

Card 3/4

KOZLOVA, Zinaida Aleksandrovna, nauchnyy sotr.; NIKOLAYEVA, Klavdiya Yeliseyevna, nauchnyy sotr.; PURIN, Marta[Purins, Marta], nauchn. sotr., kand. ekon. nauk; DEGLAV, F.[Deglavs, F.], akademik, red.; TUMSHEVITS, V.F., kand. ekon. nauk, red.; LEVI, S., red.; ZHUKOVSKAYA, A., tekhn. red.

[Policy of thrift and the organization of intrafactory cost accounting in the metalworking enterprises of the Latvian S.S.R.]
Rezhim ekonomii i organizatsiia vnutriazavodskogo khozrascheta na predpriiatiakh metalloobrabatyvaiushchei promyshlennosti Latviiskoi SSR. Riga, Izd-vo AN Latviiskoi SSR, 1957. 208 p.
(MIRA 16:6)

1. Akademiya nauk Latviyskoy SSR (for Deglav).

(Latvia--Machinery industry--Accounting)

PURIN', V.[Purins,V.]; KHALIFMAN,L.

A work about dividing the country into economic regions; a book review. In Russian. Vestis Latv ak no.3:185-187 '60.

(EEAI 10:7)

(Alampiev, Petr Martynovich) (Russia-- Economic policy)

KOLOTIYEVSKIY, A.; KOMAR, I.; MESHKAUSKAS, K.; PURIN, V.[Purins, V.]
TARMISTO, V.

The new in the economic geography of the Soviet Baltic States,
Vestis Latv ak no.9:171-175 '60. (EEAI 10:9)

(Baltic States—Economic conditions)

PURIN, V.

Activities of Latvian geographers. Izv. AN SSSR. Ser. geog. no.5:
129 S-0 '64. (MIRA 17:11)

USSR/Geography - Latvian SSR

Mar/Apr 53

"Transformation of Nature in the Latvian SSR," M.I.
Rostovtsev and V. R. Purin, Inst of Geog, Acad Sci
USSR

"Iz Ak Nauk SSSR, Ser Geograf" No 2, pp 50-58

Description of progress made in the national economy and culture of the Latvian SSR, especially in the field of electrical machinery construction, shipbuilding, machine tool construction; also high livestock production, especially dairy cattle and swine.

246T52

KOLOTIYEVSKIY, A.M.; PURIN, V.R., YAUNPUTNIN', A.I.; ASOYAN, N.S.,
redaktor; RIVINA, I.N., tekhnicheskij redaktor.

[Latvian S.S.R.] Latviiskaia SSR. Moskva, Gos. izd-vo geogr.
lit-ry, 1955. 117 p. (MLRA 8:8)
(Latvia--Economic geography)

PURIN, V.R.

In the Institute of Economics of the Academy of Sciences of the
Latvian S.S.R. Izv.AN SSSR. Ser.geog. no.2:78 Mr-Apr '55.
(Latvia--Geography) (MLBA 8:6)

PURIN, V.R.

Toponymics and transcription of geographical names of the
Latvian S.S.R. Izv.AN SSSR. Ser.geog. no.5:108-117 S-O '56.
(MLRA 9:11)

1. Institut Ekonomiki Akademii nauk Latviyskoy SSR.
(Latvia--Names, Geographical)

PURIN, V.R.; ROSTOVTSSEV, M.I.

Sea-shore near Riga. Priroda 45 no.9:74-80 S '56. (MIRA 9:10)
(Latvia--Health resorts, watering places, etc.)

PURIN, V. R.

35M/6
621.8
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Latviyskaya SSR; ekonomiko-geograficheskaya kharakteristika
(Latvian SSR; economic-geographical features, by) E. E. Vays l
V. R. Purin. Moskva, Geografiz, 1957.

439 p. illus., Diagr., Maps. Tables.

"Literatura": p. 433-438.

KOLOTIYEVSKIY, A.M.; PURIN, V.R.

Geographers of the Latvian S.S.R. Izv.AN SSSR, Ser.geog.no.1:165-167
Ja-F '57. (MLRA 10:4)

(Latvia--Geography)

ALAMPAYEV, P.; VASYUTIN, V.; DZERVE, P.; KOLOTIYEVSKIY, A.; PURIN, V.;
ROSTOVTSHEV, M.; PRYGIN, Ya.

F.IU. Deglav; obituary. Izv. AN SSSR. Ser. geog. no.6:178 N-D '57.
(Deglav, Fritsis IUR'evich, 1898-1957) (MIRA 11:1)

26-58-2-8/48

AUTHOR: Purin, V.R., Candidate of Economical Sciences

TITLE: The Protection of Nature in the Latvian SSR (Okhrana prirody v Latviyskoy SSR)

PERIODICAL: Priroda, 1958, Nr 2, pp 53-55 (USSR)

ABSTRACT: Deforestation, and its accompanying evils of denudation, soil erosion and drifting sand dunes, is of serious concern in Latvia where much indiscriminate felling of forests takes place. The discharge of industrial waste into rivers and lakes has had a serious effect on edible fish, since the waste extracts the free oxygen from the water and the fish die of oxygen starvation. Drainage of marshes near Kemeris has imperilled the town's sulphur springs and its existence as a spa. The author lists some of the measures taken by the government to protect the flora and fauna: compulsory installation of water-purification equipment for factories discharging industrial waste into rivers, laws forbidding the killing of animals except vermin, bird sanctuaries and nature reserves, protection of wild fruit groves, etc.

Card 1/2

The Protection of Nature in the Latvian SSR

26-58-2-8/48

ASSOCIATION: Institut ekonomiki Akademii nauk Latviyskoy SSR, Riga (Institute of Economy of the Academy of Sciences of the Latvian SSR, Riga)

Card 2/2 1. Nature--Preservation--Latvia

SCV-10-58-4-28/28

AUTHORS. Vasjutin, V., Dzerve, P., Kolotiyevskiy, A., Purin, V.,
and Peygin, Ya.

TITLE: Nikolay Aleksandrovich Kovalevskiy (Deceased)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya,
1958, Nr 4, pp 155 - 156 (USSR)

ABSTRACT: This is an obituary of N.A. Kovalevskiy, Academician of
the Latvian Academy of Sciences, Professor, Doctor of
Economic Sciences. There is one photograph.

1. Scientific personnel--USSR

Card 1/1

USCOML-DC-55793

PURIN, V. K., TARMISTO, V. Yu., KOTOTIYEVSKIY, A. M., KCHAR, I. V., MEDVEDEVAS, K.

"New Features in Economic Geography of Soviet Baltic Republics (the role of the so-called 'cultural factor' in geographical phenomena)."

report to be submitted for the Intl. Geographical Union, 10th General Assembly and 19th Intl. Geographical Congress, Stockholm, Sweden, 6-13 August 1960.

PURIN, V.D. [Purins, V.]

Development of geographical research in Soviet Latvia. Izv.
AN SSSR. Ser. geog. no. 1:109-115 Ja-F '66 (MIRA 19:2)

1. Latviyskiy gosudarstvennyy universitet imeni P. Stuchki.

PURIN, V.R.

Method for long-term measurement of intracranial pressure in animals.
Vop.neirokhir. 20 no.5:44-46 S-0 '56. (MLR 9:11)

1. Iz otdeleniya razvitiya mozga Instituta pediatrii AMN SSSR.
(CEREBROSPINAL FLUID,
intracranial pressure, measurement in animals (Rus))

T-3

USSR/Human and Animal Physiology. Thermoregulation

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65070

Author : Kosmarskaya Ye.N. Purin V.R.

Inst : -

Title : The Change in the Temperature of the Brain and the Body
During Medically-Induced Sleep

Orig Pub : Fiziol. zh. SSSR, 1957, 43, No 1, 40-45

Abstract : One thermocouple was imbeded into the brain substance of an unanesthetized cat through an orifice drilled in the skull. A second thermocouple was placed on the surface of the brain or in the subarachnoid space. First a notation was made of the initial temperature of the brain substance, cerebrospinal fluid and body, and then a 3% solution of sodium amytal (60 mg/kg) was injected subcutaneously. Two types of change in the temperature of the brain substance were noted during barbiturate sleep, with a step-wise rise or fall in the temperature of the brain substance. In both cases the fluctuations in the temperature of the brain

Card : 1/2

*Dept. of Brain Development, Inst. Pediatrics AMS
USSR*

PURI, V.R., Acad Sci--(disse) "The fluid system of the ^{sub}brain in ontogenesis and in certain functional states of the organism." Mos, 1958.
12 p. (Order of Labor Red Banner Inst of Electricity of the Acad Sci USSR), 200 copies (M,26-58, 117)

EXCERPTA MEDICA Sec 20 Vol 2/8 Gerontology Aug 59

1059. **Glycogen of the choroid plexus and age characteristics of chemical composition of the CSF (Russian text)** PURIN V. P. Dept. of Brain Developm. Study, Inst. of Ped., Acad. of Med. Scis of the USSR, Moscow *Vopr. med. Khimii* 1958, 4/5 (345-350) Tables 2 Illus. 1

It was shown that in kittens in the first days of life the ratio CSF glucose/blood glucose does not exceed that of the adult animals. In the embryo the concentration of protein in CSF is 20 times as high as that of adult animals. It decreases after birth, simultaneously with the changes in the glycogen content of the choroid plexus, and by 2-2.5 months of postnatal development its value attains that of adult animals. These findings are regarded as evidence of glycogen utilization by the epithelial cells of the choroid plexus in the formation of complex substances of protein nature, which pass into the CSF and serve as the source of nutrition for the developing brain. The utilization of the formed protein substances of the CSF by brain accounts for the fact that brain tissue of the mammalian embryo, in contradistinction to the tissues of other organs, is devoid of morphologically detectable glycogen.

(11, 8, 20)

USSR/Human and Animal Morphology - (Normal and Pathological)
Cardiovascular System.

S

Abs Jour : Ref Zhur Biol., No 6, 1959; 26129

Author : Purin, V.R.

Inst : "

Title : Glycogen of Vascular Plexuses of the Third and Fourth
Ventricles of the Brain in Ontogenesis

Orig Pub : Arkhiv patologii, 1958, 20, No 6, 25-31.

Abstract : The structure of vascular plexuses (VP) of the brain of cats in various stages of ontogenesis is unequal: the change of the embryonal form of VP of III and IV ventricles of the brain begins in embryos with the length of 9-10 cm and ends: of the III ventricle - towards the 30th day of postnatal development, of the IV ventricle - after 2-2½ months after birth. In cat embryos the epithelial cells of VP have large dimensions and contain in the cytoplasm few basophilic substances and much glycogen.

Card 1/2

- 24 -

PUB. IN, V.R.

Intracranial pressure and physiological mechanisms of its changes
[with summary in English, p.63]. Voo.neirokhir. 22 no.1:35-42
Jn-F '58 (MIRA 11:3)

1. Otdeleniye po izucheniyu razvitiya mozga Instituta pediatrii AMN SSSR
(CEREBROSPINAL FLUID,
intracranial pressure (Rus))

PURIN, V.R., VOLZHINA, N.S.

Method for investigating the rate of formation of the cerebrospinal fluid. Vop.neirokhir. 22 no.3:48-50 My-Je '58 (MIRA 11:8)

1. Laboratoriya po izucheniye razvitiya mozga Instituta pediatrii AMN SSSR.

(CEREBROSPINAL FLUID,
form. rate. determ (Rus))

PURIN, V.R.

New method of measuring intracranial pressure in young children.
Nauch. inform. Otd. nauch. med. inform. AMN SSSR no.1:45-46 '61
(MIRA 16:11)

1. Institut pediatrii (direktor - dotsent M.Ya. Studenikin)
AMN SSSR, Moskva.

x

PURIN, Valentin Rudol'fovich; KAPLUNOV, A.S., red.; ATROSHCHENKO, L.Ye.,
tekh.n.red.

[Latvian S.S.R. in the fraternal family of Soviet Republics]
Latviiskaia SSR v sem'e bratskikh sovetskikh respublik. Moskva,
Izd-vo "Znanie," 1960. 30 p. (Vsesoiuznoe obshchestvo po
rasprostraneniuiu politicheskikh i nauchnykh znani. Ser.1.
Istoriia, no.26). (MIRA 13:9)
(Latvia--Politics and government) (Latvia--Economic conditions)

TURCHINS, Ya.B., otv. red.; PURIN, V.R., kand. ekon. nauk, red.; TUMSHEVITS,
V.F., kand. ekon. nauk, red.; SOMS, R.V., red.; TEYTEL'BAUM, A., red.;
LEVI, S., red.; PILADZE, Ye., tekhn. red.

[Developing the national economy of the Latvian S.S.R.] Razvitie narod-
nogo khoziaistva Latviiskoi SSR; sbornik statei. Riga, Izd-vo Akad.
nauk Latviiskoi SSR, 1961. 461 p. (MIRA 14:11)

1. Latvijas Padomju Sotsialistiskas Republikas zinatnu akademiya. Eko-
nomikas institut.

(Latvia--Economic conditions)

ROSTOVTSSEV, Mikhail Ivanovich; PURIN, Valentin Rudol'fovich;
RODIONOVA, F.A., red.; KOROVINA, K.A., red.kart; SMIRNOVA,
M.I., tekhn. red.

[The Union of Baltic Republics; sketch on their economic
geography] Soiuznye respubliky Pribaltiki; ekonomiko-
geograficheskii ocherk; posobie dlia uchitelei. Moskva,
Uchpedgiz, 1962. 217 p. (MIRA 16:1)
(Baltic States--Economic geography)

PURINA, E.A. (Moskva)

"Helminthic diseases in children" by N.P. Shikhobalova. Reviewed
by E.A. Purina. Fel'd i akush. 24 no.8:60 Aug '59. (MIRA 12:12)
(WORMS, INTESTINAL AND PARASITIC) (SHIKHOBALOVA, N.P.)

AID P - 2167

Subject : USSR/Medicine

Card 1/1 Pub. 37 - 9/22

Author : Purina, E. A., Scientific Worker

Title : Experience in sanitary and educational work in the struggle against helminthiasis of children

Periodical : Gig. 1 san., 4, 36-39, Ap 1955

Abstract : Discusses inspections in three schools in 1953 and 1954, checking children for helmenthiasis. The teachers, school physicians and nurses were asked to collaborate with the health service, and lectures and exhibitions of preventive measures against parasitic worms were organized for the students and parents.

Institution : Institute of Sanitary Education, Ministry of Health, USSR

Submitted : Jl 27, 1954

PURINA, E.A. (Moskva)

Orginzation and method of health education in the school in the
prevention of ascariasis. Fel'd. i akush. 25 no. 7:43-47 Je '60.

(MIRA 13:8)

(ASCARIDS AND ASCARIASIS) (HEALTH EDUCATION)

PURINA, E.A. (Moskva)

Experience in health education work in a school in the prevention
of ascariasis. Sov.zdrav. 20 no.5:52-56 '61. (MIRA 14:5)
(ASCARIDS AND ASCARIASIS) (HEALTH EDUCATION)

PURIN, S. A., nauchnyy sotrudnik

Health campaign for training children in the prevention of
ascariasis in a Pioneer camp. Gie. i san. 22 no.4:86-87 no 157.
(Mikha 19:9)

1. Iz Instituta sanitarnogo prosveshcheniya Ministerstva zdравo-
okhraneniya SSSR
(ASCARIASIS, prevention and control,
health educ. (Eng))

IVANKIN, P.F.; MITRYAYEVA, N.M.; PURKINA, Z.A.

Types of ores and stages in the ore formation in the
Novoberezovskoye deposit. Trudy Alt.GMNII AN Kazakh.SSR
8:146-169 '60. (MIRA 13:7)
(Altai Mountains--Sulfides)

PURING G.P.; POLUEKTOV

Attachment for machining bearing bushings. Obn, tokh, opyt.

[MLP] no.20:15-16 '56.

(MIRA 12:11)

(Lathes--Attachments)

PURING, V.I., inzhener.

Apparatus for automatic control of low-voltage systems. Prom.
energ. 11 no.8:32 Ag '56. (MLRA 9:11)

1. Leningradskoye otdeleniye Gosudarstvennogo politekhnicheskogo
instituta Elektroyekt.
(Electric circuit breakers)

PURING, V.I., inzhener.

Protection of power transformers in substations of industrial establishments. Prom.energ.11 no.12:11-12 D '56. (MJRA 10:1)

1. Leningradskoye otdeleniye Gosudarstvennogo proyektного instituta Elektroyekt.

(Electric transformers)

PURINOV, G.

Improve methods for determining noncredit items of repair and
supply stations. Den. i kred. 17 no.12:51-53 D '59.
(MIRA 12:12)

(Repair and supply stations--Finance)

PERINS, A.

Distr: 4E2c

Electrochemical and corrosion behavior of iron in aqueous solutions of electrolytes. III. Electrode potential and corrosion rate of iron in acidic solutions of electrolytes. 7
B. Purins and L. Liepins. *Latvian PSR Zindynu Akad.*
Vestis 1957, No. 12, 141-60 (in Russian); cf. C.A. 51, 10268a. — Electrode potentials (I) and corrosion rates (II) of Fe were measured in nonstirred solns. at room temp. for periods up to 120 hrs. In 0.1-2N HCl, I rapidly shifted by 20-30 mv. in the pos. direction and then remained relatively const., while II went through a min. In 0.01-0.02N HCl intermediate behavior was observed, where, after an initial pos. drift, I shifted in the neg. direction, reaching gradually a stationary value, while II went through a min., increased, and finally again slightly decreased with time. In more dil. HCl, I was unstable, shifting alternately in both directions. In NaCl + HCl, CaCl₂ + HCl, and K₂SO₄ + H₂SO₄ solns., similar behavior was observed, where at lower pH, 2, I always shifted initially in a pos. direction by a few tenths

of a mv. to reach a stationary value, while at higher pH, a shift in the neg. direction followed sooner or later. II was always fast at beginning, dropped to a min., and then slowly increased towards a stationary value; the latter increase occurred usually at a const. I. The initial decrease in II was explained by an accumulation of Fe⁺⁺ in the boundary layer of the electrolyte, while the subsequent increase in I by participation of reaction $Fe^{+++} + e \rightarrow Fe^{++}$ in the cathodic depolarization mechanism. At low pH, I but not II was decreased by an increase in the salt concn. At pH 1.5 in HCl, I was 273, 272, and 271 mv. and II was 0.11, 0.12, and 0.17 mg./sq. cm./hr. in 0.2, 0.03, and 0.002N NaCl, resp. At higher pH, behavior of Fe in slightly acidified solns. became similar to that in neutral solns.

A. Dravnieks

BESEDINS, G.; PURINS, V.; VOLBERGS, K.[translator]; RINKS, E., red.;
CAKSS, J., tekhn. red.

[Economic relations of the Latvian S.S.R.] Latvijas PSR ekono-
miskie sakari. Riga, Latvijas Valsts izdevnieciba, 1961. 85 p.
[In Latvian] (MIRA 14:12)

(Latvia--Commerce)

PURINSON, B.L.

Inhalation anesthesia with heated ether vapor in the surgical
clinic and under experimental conditions. Trudy 1-go MMI 3:52-65
'57. (MIRA 14:5)
(ETHER (ANESTHETIC))

DAVIDOV, V.I.; DORINSON, Yu.A.; LAVRUKHIN, B.O.; PLATY, N.A.

Synthesis of optically active unsaturated silicon hydrocarbon with
an asymmetrical silicon atom. Izv. AN SSSR Ser. khim. no.2:387-389
165. (MIRA 12:2)

1. Institut neftekhimicheskogo sinteza im. A.V. Topchiyeva AN SSSR.

LEYKIN, A.S., kand.tekhn.nauk; PURINSON, Yu.A., inzh.

Water emulsified perchlorovinyl color compounds for reinforced
concrete and other panels. Stroci. mat. 7 no.4:18-19 Ap '61.
(MIRA 14:5)

(Concrete---Coloring) (Vinyl compounds)
(Paint materials)

DAVIDSON, D.L., inzh.; PURINYSH, R.A. [Purins, R.A.], inzh.

DP-1 and DP-2 automatic shovels. Mekh. trud. reb. 11 no.12:30-31

D '57.

(MIRA 11:3)

(Loading and unloading--Equipment and supplies)

ZEMSKOV, V.S.; BELAYA, A.D.; PURIS, T.Ye.

Indium and gallium interaction during the crystallization of
germanium from melts containing these elements. Fiz.tver.
tela 5 no.4:1100-1103 Ap '63. (MIRA 16:8)

1. Institut metallurgii imeni A.A.Baykova AN SSSR, Moskva.
(Germanium crystals—Growth)
(Indium) (Gallium)

S/181/63/005/004/020/047
B102/B186

AUTHORS: Zemskov, V. S., Belaya, A. D., and Puris, T. Ye.

TITLE: Interaction of indium and gallium during the crystallization of germanium from melts containing these elements

PERIODICAL: Fizika tverdogo tela, v. 5, no. 4, 1963, 1100 - 1103

TEXT: The authors studied the mutual effects of indium and gallium on their distributions in the liquid and solid phases when germanium crystallizes out of a melt containing In and Ga. The method applied for determining the distributions had been described earlier (ZhFKh, 36, 1914, 1962; Izv. AN SSSR, OTN, Metallurgiya i toplivo, 86, 1959). The crystals were pulled slowly (0.04 mm/min) from a well mixed (170 rpm) melt so that equilibrium crystallization could be assumed. The ingredients were n-type germanium (40 ohm·cm), Ga with no more than $10^{-4}\%$ impurities (Al, Cu, In, Sn) and In of the same purity ($<10^{-4}\%$ Pb, Sn, Ga, Ge, Cd). The melt contained 90 at% Ge and 10 at% In+Ga. Crystallization started at 909°C; the total concentration of the alloyed elements was determined by measuring the Hall constant, the In concentration was determined radiographically

Card 1/2

Interaction of indium and...

S/181/63/005/004/020/047
B102/B186

(In¹¹⁴) and the Ga concentration was calculated by subtracting the In concentration from the total. All samples investigated were monocrystalline, single-phased and showed uniform In distribution. From the concentration measurements the dependence of the distribution coefficients K on the In:Ga ratio in the melt was calculated. An increase of the Ga content caused a reduction of K_{In} from $8.5 \cdot 10^{-4}$ to $3.5 \cdot 10^{-4}$, and an increase of the In content reduced K_{Ga} from $8.5 \cdot 10^{-2}$ to $1.3 \cdot 10^{-1}$. The cause of this mutual effect has to be sought in the Ga-In interaction in the solid phase. It can be explained when the concentration dependence of the In and Ga ionization conditions in the crystal is taken into account. There is 1 figure.

ASSOCIATION: Institut metallurgii im. A. A. Baykova AN SSSR Moskva
(Institute of Metallurgy imeni A. A. Baykov AS USSR, Moscow)

SUBMITTED: August 11, 1962 (initially)
November 9, 1962 (after revision)

Card 2/2

KOVALEV, Il'ya Antonovich, istorik, krayeved; PURISHEV, Ivan Borisovich,
arkhitektor; MURASHEV, G.A., red.; KRASULINA, T.N., tekhn. red.

[A guide to the historical sites and architectural monuments of
Uglich] Uglich; putevoditel' po istoricheskim mestam i arkhi-
tekturnym pamiatnikam. IARoslavl', IARoslavskoe knizhnoe izd-vo
1960. 201 p. (MIRA 14:7)

(Uglich—Description)

FURISHAN, S. I.

FURISHAN, S. I. --"Experience in the Use of Free Skin Crafting in the Case of Deep Burns, Wounds not healing for a Long Time, and Trophic Ulcers."
Min. Public Health USSR, Central Inst. for the Advanced Training of Physicians,
Moscow, 1955. (Dissertation for the Degree of Candidate in Medical Sciences)

SO: Knizhnaya Letopiz ', No. 35, 1955

YAKUBOVICH, I.A.; PASKHIN, N.F.; VILYANSKIY, M.P.; BABIN, S.Ye.; SLAVUTSKAYA, N.I.; *Prinipialy izobreteniya*: PARADNYA, P.I.; RUPNEVSKAYA, M.I.; PURISMAN, V.I.; LEONOVA, I.F.; PASHKOV, A.S.; BACHURINA, K.M.; FECHIN, M.I.; ZUKSINA, L.A.; PONOMAREV, Yu.F.; DZMOVICH, Ye.I.; PIKUSOVA, R.A.

Production and use of synthetic water-soluble polyacrylamide adhesives. *Ferm. i spirt.prom.* 30 no.8:32-34 '64.

(MIRA 18:1)

L. Moskovskiy khimico-vodochnyy zavod.

IVANYUK, M.I.; PURISMAN, Yu.I.

Producing starch and gluten substances from wheat. Sakh. prom.
33 no.8:62-66 Ag '59. (MIRA 12:11)

1.Kiyevskoye oblastnoye upravleniye promprodtovarov.
(Starch) (Gluten) (Wheat)

9.4340 (1143, 1150, 1160)

29905
S/584/61/000/011/002/008
E194/E455

AUTHORS: Puritis, T.Ya. and Shinka, Ya.K.

TITLE: The inverse-voltage of germanium rectifier elements

SOURCE: Akademiya nauk Latviyskoy SSR. Institut energetiki
i elektrotekhniki. Trudy. no.11. Riga, 1961.
Poluprovodniki i ikh primeneniye v elektrotekhnike.
no.1. 17-40

TEXT: It is often necessary to work germanium rectifiers as near the limit as possible and for this purpose it is useful to know by how much the inverse-voltage can be raised if the rectifiers are operating below rated current. Published data are not conclusive on this point and accordingly the present article gives experimental relationships between the breakdown voltage and temperature. It also indicates the permissible inverse-voltages on germanium rectifier elements type BF-10 (VG-10) under conditions that are frequently met in practice. The theory of breakdown of a solid dielectric is first discussed. When an electric field is applied to a dielectric, the energy levels and zones become sloping, whilst electrons move horizontally in the conductivity zone and so pass from one energy level to another.
Card 1/9

29905

S/584/61/000/011/002/008

E194/E455

The inverse-voltage of ...

The form of breakdown when a sufficiently high electric field strength is applied depends upon various conditions. It may result from thermal ionization at high temperatures, impact ionization, or electrostatic ionization - the Zener effect. If, in a semiconductor, an inverse-voltage is applied to the junction, the concentration of free carriers is small and the properties of the p-n junction are analogous to those of a dielectric. Accordingly, the following main types of breakdown are possible in p-n junctions of germanium rectifier elements -
(1) thermal breakdown caused by thermal ionization or
(2) electrical breakdown caused by (a) electrostatic ionization or (b) impact ionization. Application of an inverse-voltage causes current to flow, which heats the semiconductor. Thermal breakdown is characterized by decrease in the breakdown voltage and can be caused by excess temperature, impairment of heat transfer or prolonged application of voltage. Electrical breakdown is observed in all germanium rectifiers, but only under conditions that preclude thermal breakdown, i.e. at low temperatures, with good heat transfer and electrical impulses of short duration and low recurrence frequency. Zener breakdown in ordinary germanium

ix

Card 2/9

29905

S/584/61/000/011/002/008

E194/E455

The inverse-voltage of ...

diodes is improbable in practice, but it can occur at low values of inverse-voltage when using low-resistance germanium. In most cases, the electrical breakdown of p-n junctions in germanium is caused by impact ionization. The ionization coefficients of electrons and of holes are criterial magnitudes of impact ionization. They are expressed by the number of electron-hole pairs formed by a single electron (or hole) on one cm of path in the direction of the electric field. Avalanche breakdown occurs if either of these coefficients tends to infinity. The value of the breakdown voltage under impact ionization depends on the specific resistivity of the material, though different expressions have been given for the relationship between the two values. Let β denote the thermal coefficient of breakdown under impact ionization, referred to a temperature of 293°K. For germanium it is recommended to use the value

$$\beta = 1.2 \times 10^{-3} \text{ 1/}^{\circ}\text{C}$$

In practice, germanium diodes usually operate with temperature differences not greater than 20 to 30°C, within which range the

Card 3/9

29905

S/584/61/000/011/002/008
E194/E455

The inverse-voltage of ...

change in breakdown voltage does not exceed 3 to 4%. Soviet germanium rectifiers are made of single crystal germanium with a specific resistance of 14 to 20 ohm/cm. Accordingly, Zener breakdown cannot occur in the junctions of germanium diodes and on theoretical grounds the breakdown voltage for impact ionization should range between 417 and 600 V. However, actual samples have much lower breakdown voltages than this and also a fairly marked reduction in permissible inverse-voltage with increase of temperature. Thus, according to certain published results, the breakdown voltage is reduced by 5 V on increasing the temperature by 1°C; and according to other published data, germanium elements type VG-10 with an inverse-voltage of 50 to 100 V had an electric strength greater than 360 V at 25°C but only 160 V at 75°C. This indicates that under normal operating conditions, the permissible inverse-voltage is limited mainly by thermal or thermo-electric breakdown. This is confirmed by test results of breakdown as a function of temperature. Accordingly, to elucidate the main forms of breakdown and to determine the temperature relationship of the breakdown voltage in actual rectifier elements, an experimental study was made of the change in the permissible inverse-voltage of

Card 4/9

X

The inverse-voltage of ...

29905
S/584/61/000/011/002/008
E194/E455

rectifier elements type VG-10 manufactured by the Elektrovpyramitel' Works. The tests were made in a thermostat and the samples were fixed to a copper-plate of high thermal capacity, so that the body of the rectifier element was maintained at a steady temperature within $\pm 0.5^{\circ}\text{C}$. The inverse-voltage was applied in the form of half-wave sinusoidal impulses at a frequency of 50 c/s, and the breakdown current was limited by a series resistance of the order of 6 to 7 kilohms. The inverse-current passing through the element during the test caused additional heating of the junction, so that during the test its temperature pulsed at the frequency of the applied inverse-voltage. Thus, throughout the test, the temperature of the junction was above that of the body of the rectifier. To obtain comparable values of breakdown voltage as a function of temperature, it is necessary to know the temperature of the junction. However, as this temperature is difficult to determine during the application of a sinusoidal half-wave inverse-voltage, the experimental conditions were so selected as to maintain constant the maximum temperature difference between the junction and the body of the rectifier. Theoretical considerations show that if the value of the maximum power of an impulse is

Card 5/9

29905

S/584/61/000/011/002/008

E194/E455

The inverse-voltage of ...

maintained constant the temperature difference of the junction will also remain constant. In practice, most elements type VG-10 operate stably if the maximum power in the inverse direction does not exceed 10 W, and this value was taken as a criterion for obtaining the relationship between the permissible inverse-voltage and temperature. For samples in which thermal breakdown occurred at a lower power level, a record was kept of the voltage at which thermal breakdown was revealed by the oscillograph. The tests were made over the ambient temperature range of 15 to 60°C using germanium rectifier elements of the following types, BF-10-30 (VG-10-30), BF-10-45 (VG-10-45), BF-10-55 (VG-10-55), BF-10-80 (VG-10-80), BF-10-110 (VG-10-110) manufactured by the Elektrovypryamitel' Works in 1958-1959. Excluding those with unstable characteristics, the type VG-10 rectifier elements may be classed into two groups according to whether thermal breakdown occurred with the impulse power above or below 10 W. Curves of breakdown voltage as a function of temperature for the first of these groups usually have an initial horizontal part followed by a slope. It is concluded that the horizontal part corresponds to electric breakdown of the junction and the sloping part to

Card 6/9

x

29905

S/584/61/000/011/002/008

E194/E455

The inverse-voltage of ...

thermo-electric breakdown. For elements of the second group, all the curves of breakdown voltage as functions of temperature are sloping, but certain of them show an inflection point. It is concluded that the less sloping part of the curve corresponds to thermo-electric breakdown which with increasing temperature becomes thermal breakdown where the slope of the curve changes. However, attention is drawn to the temperature coefficient of breakdown β , which is the change in breakdown voltage when the temperature is reduced by 1°C relative to the breakdown voltage at the maximum temperature of 60°C . Consideration of this coefficient shows that the above classification of the elements into two groups is in fact arbitrary and that there are elements in which breakdown occurs by combined thermal and electrical (avalanche) ionization giving thermo-electric breakdown. The actual value of β for the elements type VG-10 varies over a wide range but the following values are suggested as a result of the work. In the case of electrical breakdown, $\beta = 0$. In the case of thermo-electric breakdown, $\beta = -0.5 \times 10^{-2} \text{ } 1/^{\circ}\text{C}$ and in the case of thermal breakdown, $\beta = -1.1 \times 10^{-2} \text{ } 1/^{\circ}\text{C}$. As the thermal coefficient of breakdown is negative, some increase in the inverse-
Card 7/9

29905

S/584/61/000/011/002/008

E194/E455

The inverse-voltage of ...

voltage of the rectifier element is possible if the temperature of the junction is not too high. However, to determine the possible increase of inverse-voltage, it is necessary to know either the value of β for the given rectifier element or at least to determine from its volt-ampere characteristic the type of breakdown at the working temperature and to use the mean values of the coefficient given above. The ratio of the breakdown to the rated voltage is lowest in rectifiers with high rated inverse-voltage. Thus for rectifiers type VG-10-110 with a nominal voltage of 110 V, the average value of this ratio is 2.4 and the least value found was 1.8 whilst for elements VG-10-30 with a rated voltage of 30 V the corresponding values are 4.7 and 3.2. Thus, elements type VG-10 of low rated voltage have much more voltage reserve than those of high rated voltage. There are 12 figures and 22 references: 11 Soviet and 11 non-Soviet. The four most recent references to English language publications read as follows

Ref.10: J.I.Missen. IEE Proceedings, v.106, part C, 1959, no.9, 3-11;
 Ref.11: A.W.Matz. IEE Proceedings, v.104, part B, 1957, no.18, 555-564;
 Ref.18: D.R.Muss, R.F.Greene. J. Appl. Phys., v.29,

X

Card 8/9

29905

S/584/61/000/011/002/008
E194/E455

The inverse-voltage of ...

1958, no. 11, 1534-1537. Ref. 22P Semiconductor rectifiers.
Electr. Rev., v. 161, 1957, no. 14, 587-592.

X

Card 9/9

ACC NR: AP7001328

SOURCE CODE: UR/0371/66/000/005/0020/0027

AUTHOR: Krike, R. K. --Krike, R.; Puritis, T. Ya. --Puritis, T.

ORG: Institute of Physics and Power Engineering, AN LatvSSR (Fiziko-energeticheskiy institut, AN LatvSSR)

TITLE: Effect of ambient temperature on microplasma phenomena and on the breakdown voltage of p-n silicon junction

SOURCE: AN LatSSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk, no. 5, 1966, 20-27

TOPIC TAGS: pn junction, temperature dependence, thermal ionization, breakdown voltage, silicon, microplasma

ABSTRACT: Temperature dependence of the current jump amplitude, the breakdown voltage, and the resistance of the individual microplasma, as well as the temperature dependence of the breakdown voltage of the p-n junction on the ambient temperature was investigated. It was established that the intermittent decrease of thermal coefficient of the breakdown voltage in the p-n junction,

Card 1/2

ACC NR: AP7001328

observed with increased ambient temperature, is due to transition of the impact ionization voltage in each microplasma to the thermal ionization voltage. Orig. art. has: 5 figures. [Translation of abstract] [AM]

SUB CODE: 09, 20/SUBM DATE: 13Jul65/ORIG REF: 007/OTH REF: 008/

Card 2/2

9.2150 (1159,482)

29909
S/548/61/000/011/006/008
E194/E455

AUTHORS: Puritis, T.Ya. and Strengs, D.F.

TITLE: Equipment for determining the volt-ampere characteristics of power semiconductor rectifier elements

SOURCE: Akademiya nauk Latvyskoy SSR. Institut energetiki i elektrotekhniki. Trudy. no.11. Riga, 1961. Poluprovodniki i ikh primeneniye v elektrotekhnike. no.1. 73-86

TEXT: In determining the volt-ampere characteristics of rectifiers there are great advantages in using unipolar voltage impulses instead of alternating voltage. Accordingly, this principle was used by the Institut energetiki i elektrotekhniki in developing equipment for determining the forward and inverse voltage-ampere characteristics. The equipment is intended for testing power silicon and germanium rectifier elements and is designed for a mean forward current value of 200 A and a maximum inverse voltage of 1200 V. It comprises two independent units: a test rig with thermostat and an electronic device for plotting the volt-ampere characteristics on calibrated axes. A schematic diagram of the
Card 1/8

29909

S/548/61/000/011/006/008

E194/E455

Equipment for determining ...

circuit used for determining the inverse volt-ampere characteristics (Ref. 2: A.H.Walker, R.G.Martin. Electronic Engineering, April 1957, 150; May 1957, 220) is shown in Fig. 1 in which the rectifier on test is denoted B_{WON} . The unipolar sinusoidal voltage impulses are set up by the rectifier B_2 operating in a half-wave circuit. The rectifier B_4 shunts the circuit B_3 R_3 B_{WON} R_T and thus removes the forward voltage from the rectifier under test. The schematic circuit used for determining the forward branch of the volt-ampere characteristics is shown in Fig. 2 which, unlike the circuit of Fig. 1, has no rectifiers B_3 or B_4 because these rectifiers have little shunting effect in testing high-power rectifier elements. The test rectifier is shunted by the resistance R_2 which takes the inverse voltage. Accordingly, the value of R_2 should be considerably less than the resistance of the test rectifier in the inverse direction. The way in which these two schematic diagrams are combined to form the complete circuit is described in considerable detail and the functions of the various selector switches and knobs are explained. In practice, one of the change-over switches and the rectifier elements under test are

Card 2/8

29909

S/548/61/000/011/006/008

E194/E455

Equipment for determining

located in a special air thermostat suitable for testing nine rectifier elements at once. The elements are held on a heavy copper plate which can be raised to a temperature of 200°C in the thermostat. For tests at low temperatures down to -50°C , the copper plate and change-over switch are placed in a cold box and the changeover switch is provided with remote controlled electric drive. A disadvantage of the rig as described so far is the need for preliminary calibration of the oscillograph and once this has been done the setting of the oscillograph amplifier must not be altered. In order to overcome this difficulty, the Laboratory developed an electronic device with which the volt-ampere characteristics can be plotted in calibrated rectangular coordinates. Both the calibrated axes and the characteristic appear on the cathode-ray oscillograph screen. The length of the calibrated axes is altered at the same time as the characteristic if the oscillograph amplification is adjusted. As the tests are made with unipolar impulses obtained from a half-wave rectifier circuit, the characteristic plot appears for only half the available time and the other half is used to plot the coordinates. This necessitates synchronous switching. Various devices were

Card 3/8

Equipment for determining ...

29909
S/548/61/000/011/006/008
E194/E455

tried but all had their disadvantages and so a new system was developed: the schematic circuit diagram is given in Fig. 6. Here again, the test rectifier is noted B_{rect} and to it in series with the resistance R_p is applied a unipolar impulse voltage U_1 from the previously described test rig 1. The voltage drop on the rectifier element is applied to the x-input of the electronic switch unit 3. The voltage drop on the ohmic resistance R_p which is proportional to the currents through the test rectifier is applied to the y-input of the switching unit. A special generator 4 is used to apply calibrating voltages U_3 and U_5 to the switching unit. Use is made of U_3 impulses of one polarity to plot the x axis. The y axis is formed by impulses of U_5 of the opposite polarity with a phase displacement of 180° . The impulses must have a frequency not less than double that of the test voltage U_1 . The electronic switch unit is controlled by unit 2: it is a generator of square-wave positive blocking voltage impulses U_2 and U_4 which are synchronous in phase with the voltage U_1 and differ from one another in time by 180° . The electron switch unit 3 operates as follows. During the half period when the voltage U_1 acts on the rectifier element, the

Card 4/8

29909

S/548/61/000/011/006/008

E194/E455

Equipment for determining ...

voltage U_4 blocks the input of the electronic switch to the voltages U_3 and U_5 and opens the switch unit to the voltage U_1 . The cathode-ray oscillograph 5 thus plots the volt-ampere characteristic of the test rectifier. In the half-cycle where the voltage U_1 is absent, the voltage U_2 blocks the input of the electronic switch to the voltage U_1 and opens the switch input to the voltages U_3 and U_5 , so that the cathode-ray oscillograph plots the axes x and y in turn. The frequency of repetition is sufficient for the characteristic curve and axes to appear continuously on the screen. The operation of the calibrating generator 4 is also explained; it is a combined rectifier resistance bridge circuit to which a sinusoidal voltage is applied. A prototype of the equipment was made in the semiconductor laboratory of the Institut energetiki i elektrotekhniki AN Latvyskoy SSR (Institute of Power and Electrical Engineering, AS Latvian SSR), and the test results obtained were satisfactory. The equipment may be used in factories manufacturing semiconductor rectifiers or other non-linear elements and it may also be used in research and works laboratories working on semiconductors. There are

Card 5/8

X

Equipment for determining ...

29909
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E194/E455

9 figures and 4 references: 3 Soviet and 1 non-Soviet. The reference to an English language publication is quoted in the text.

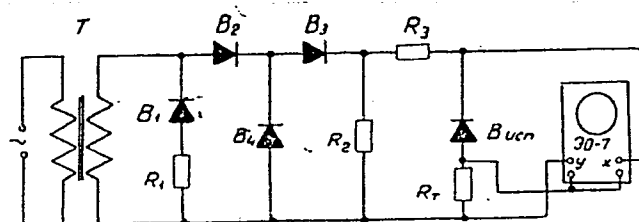


Fig.1.

Card 6/8

S/194/62/000/002/050/096
2201/0501

9,9540

AUTHORS: Puritis, T. Ya. and Strenge, D. F.

TITLE: An arrangement for determining the volt-ampere characteristics of semiconductor power devices

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 2, abstract 2-4-31zh (Tr. In-ta energ. i elektrotekhn., AN LatvSSR, 1961, 11, 73-86)

TEXT: The proposed arrangement makes it possible to determine at various temperatures with an oscilloscope the dynamic volt-ampere characteristics of semiconductor power-diodes (type ПБК-100 (PVK-100)). The use of single-polarity pulses (half-wave sinusoid) permitted a considerable lowering of power consumed by the arrangement. The arrangement allows taking either the forward or the reverse branch of the semiconductor diode characteristic for average d.c. currents up to 200 A and max. reverse voltage of 1200 V. The arrangement consists of two independent sections (the experimental bench with a thermostat and an electronic device for recording the

Card 1/2

An arrangement for ...

S/194/62/000/002/050/096
D201/D301

volt-ampere characteristic in graduated coordinates). The experimental bench operates at a frequency of 50 c/s. The basic circuit connections for taking the forward and reverse branches of the diode characteristic, the complete circuit diagram of the experimental bench and their respective descriptions are given. The electronic recording installation permits determination of the volt-ampere characteristic in any of the quadrants of graduated coordinate system on the screen of a single beam CRO; the axes are shown during the half-period when there is no voltage across the diode. The graduation of the coordinates can be changed within wide limits. The electronic arrangement has a spherical generator of single-polarity voltage pulses for the presentation of graduated axes, a commutator (switching in to the bench either the CRO inputs or the generator of the graduated axes voltage) and a unit of commutator operation control. The basic circuit diagrams of the generator, electronic arrangement and the bloc-diagram of the latter are given. The principles of operation of the arrangement are described. A photograph of the volt-ampere characteristic of a semiconductor diode as reproduced in graduated coordinates at the CRO screen is given. 4 references. /-Abstracter's note: Complete translation._/ Card 2/2

38755
S/194/62/000/005/065/157
D295/D308

9.4340

AUTHORS:

Puritis, T.Ya., and Shinka, Ya.K.

TITLE:

Inverse voltage of germanium rectifier elements

PERIODICAL:

Referativnyy zhurnal. Avtomatika i radioelektronika,
no. 5, 1962, abstract 5-4-23 shch (Trudy In-ta energ.
i elektro-tekh. AN LatvSSR. 11, 1961, 17-40)

TEXT: The physical processes causing break-down of germanium rectifiers are investigated in detail. It is observed that under normal operating conditions the breakdown voltage is determined in most cases by thermal or thermoelectric breakdown (thermal and impact ionization). The measurement method is described in detail and results are shown of a large number of measurements of the breakdown voltage of a BR-10 (VG-10) type rectifier at various temperatures. The breakdown voltage was determined as the voltage at which the maximum power during the passage of inverse current in the rectifier reached 10 W. Mean values of the temperature coefficient of the breakdown voltage were obtained: Electrical breakdown $0, \text{ thermoelec-}$
tric breakdown 0.5×10^{-2} , thermal breakdown $1.1 \times 10^{-2} / ^\circ\text{C}$. The
Card 1/2

KROGERIS, A.F., kand. tekhn. nauk, otv. red.; BARZDAVNE, I.V.,
[Pozharinov, L.], kand. tekhn. nauk, red.; BILCHIKOV,
I.S. [Kuznetsov, L.], kand. tekhn. nauk, red.;
[Kuznetsov, T.], red.; LAURMANIS, L., red.; SHUL'YS, I.,
red.

[Izvestiya o nauke i tekhnologii v oblasti
"Engineering"] Poluprovodniki i ikh primeneniye v elektronnoy
tehnike. Riga, Izd-vo AN Latvisskoy SSR. Vol. 3, 1977,
251 p.
1. Latvian People's Socialist Republics Ministry
of Science, Energetics Institute.

ACC NR: AP603367C

SOURCE CODE: UR/0371/66/000/004/0040/0045

AUTHOR: Balodis, Ya. K.--Balodis, J.; Puritis, T. Ya.

ORG: Physics and Power Institute, AN LatSSR (Fiziko-energeticheskiy institut AN LatSSR)

TITLE: Light emission from microplasma of a silicon p-n junction under various punch-through conditions

SOURCE: AN LatSSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk, no. 4, 1966, 40-45

TOPIC TAGS: pn junction, silicon, ~~p-n junction~~, ~~punch-through~~, ~~punch-through~~ light emission, punch through ionization, microplasma

ABSTRACT: The results of experimental investigations of the light intensity of single microplasma and its role in the total light emission of a p-n junction are presented and discussed. Finely diffused n-type boron-doped silicon p-n junctions embedded not deeper than 2 μ below the surface of the specimen were used to facilitate observation of light emission over the whole (about 2 mm²) area of the junction. The intensity of light from a microplasma as a function of reverse voltage shows a maximum after which it subsides. At a given reverse voltage, the intensity of light diminishes with rising temperatures while its maxima shift toward lower voltages. The integral light intensity as a function of the reverse voltage has a similar general character, but it greatly exceeds the sum of the individual light intensities of the microplasmas.

Card 1/2

ACC NR: AP6033670

and its maximum of ten shifts beyond those of the microplasmas as a result of time differences between microplasma flashes. Several integral maxima may develop from the same cause. The light intensity maxima of microplasmas were found to indicate the turning point in the punch-through mechanism from the avalanche to the thermoelectric. Concurrently, light intensity can serve as an indication of the predominant mechanism: when light intensity grows with the current, the shock ionization is the principal source of carrier multiplication; otherwise, the thermal ionization is the main factor. Purely thermal punch-through starts with the extinguishing of light emission, the extinction being believed to be actually a change of the wavelength into the infrared. The experiments demonstrated a close relation between the mechanism of punch-through and the intensity curve of light emission, but a detailed spectral analysis of light emitted by microplasmas needs further investigation. Orig. art. has: 4 figures.

SUB CODE: 20 / SUBM DATE: 13Jul65/ ORIG REF: 005/ OTH REF: 007/ ATD PRESS: 5100

Card 2/2 *29/2*

ACC NR: AP6024852

SOURCE CODE: UR/0371/66/000/002/0037/0043

AUTHOR: Pentyush, B. V. -- Pentjuss, E.; Puritis, T. Ya.

ORG: Institute of Energetics, AN LatSSR (Institut energetiki, Latv. SSR)

TITLE: Some parameters and temperature levels of microplasmas

SOURCE: AN LatSSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk, no. 2, 1966, 37-43

TOPIC TAGS: *PN JUNCTION,* transistor, transistor junction microplasma, microplasma parameter, ~~short~~ pulse generator/G5-11 ~~short~~ pulse generator

ABSTRACT: The author presents a methodology for and results of the determination of relative temperature levels and other parameters of large ($1 - 2 \text{ mm}^2$ area) microplasmas in p-n junctions. The method is a further development of the short isothermal exploring pulse method of B. Sinitzky and P. Radin (J. Appl. Phys., 1959, 30, 1945). Exploration of large microplasmas necessitates very short measurement times. In the described method the attained measurement intervals were substantially below $5 \cdot 10^{-8} \text{ s}$. Very short rectangular pulses for the input were obtained from the G5-11 pulse generator; the output pulses were amplified by the U3-5 amplifier and handled by the C1-10 oscillograph. Microplasmas diameters were computed using the expressions: 1) $R_o = R_s - R_c$ 2) $R_s = \rho / 2d$, where R_o - output resistance of the microplasma; R_c - space charge resistance and ρ - the specific resistance of the initial material. Silicon p-n junctions

Card 1/2

ACC NR: AP6024852

obtained by the diffusion of boron into donor type silicon with a specific resistance of 4 ohm.cm were used for the experimentation. The area of junctions varied between 1 and 2 mm². It was found that microplasma resistances varied from several kilohms to several tens of kilohms. Microplasma temperature level was approximately linear with the current; on the average, the microplasmas heated up about 100°C relative to the surrounding environment per ma of current.

SUB CODE: 09/

SUDM DATE: 13Jul65/

ORIG RFP: 003/

OTH RFP: 008

Card 2/2

SOV/137-58-8-16615

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 53 (USSR)

AUTHORS: Mikhel'son, G.I., Purits, M.F.

TITLE: Certain Economic Indices of the Development of the Aluminum Industry in the USSR (Nekotoryye ekonomicheskiye pokazateli razvitiya alyuminiyevoy promyshlennosti v SSSR)

PERIODICAL: V sb.: Legkiye metally. Nr 4. Leningrad, 1957, pp 11-15

ABSTRACT: Bibliography entry

1. Aluminum industry--USSR 2. Aluminum industry--Economic aspects

Card 1/1

AUTHORS: Bershteyn, Ya.A. and Purits, M.F.

SOV/136-58-9-20/21

TITLE: The Aluminium Industry of France and the Construction of a new Aluminium Works Based on the Lac Natural-gas Deposits (Alyuminiyevaya promyshlennost' Frantsii i stroitel'stvo novogo alyuminiyevogo zavoda na baze prirodnogo gaza mestorozhdeniya Lak)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 9, pp 84 - 88 (USSR)

ABSTRACT: The authors review the development of the aluminium industry in France and the French African possessions and go on to consider in some detail the possibilities of basing an aluminium works on the natural gas deposits recently discovered in S.W. France near the Pyrénées. There are 1 figure and 16 references, 6 of which are English, 6 French and 4 Soviet.

1. Aluminum industry--France 2. Natural gas--France

Card 1/1

SOV/137-58-10-20662

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 48 (USSR)

AUTHOR: Purits, M.F.

TITLE: The Current Status of the Production and Consumption of Aluminum in the Capitalist Countries (O sovremennom sostoyanii proizvodstva i potrebleniya alyuminiya v kapitalisticheskikh stranakh)

PERIODICAL: V sb.: Legkiye metally. Nr 3. Leningrad, 1957, pp 90-95

ABSTRACT: An economic and statistical survey of data on the status of Al production and consumption.

Ye. Z.

1. Aluminum--Production 2. Aluminum--Consumption 3. Data
--Statistical analysis 4. Social sciences

Card 1/1

BERSHTEYN, Ya.A.; PURITS, M.F.

Aluminum industry in France and the construction of a new
aluminum plant working on natural gas from the lac deposit
(from foreign periodicals). TSvet. met. 31 no.9:64-88 S '58.

(MIRA 11:10)

(France--Aluminum industry)

PURITS, M.F.

137-58-5-9239

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 67 (USSR)

AUTHOR: Purits, M.F.

TITLE: Some Data on the Present State of the Aluminum Industry in the Capitalistic World (Nekotoryye dannyye o sovremennom sostoyanii alyuminiyevoy promyshlennosti v kapitalisticheskikh stranakh)

PERIODICAL: Sb. materialov tekhn. inform. Gos. in-t po proyektir. alyumin.; magniyevykh i elektrodn. z-dov, 1957, Nr 1, pp 50-53

ABSTRACT: In terms of rate of growth, the output of aluminum industry significantly surpasses the production of other metals. 631,000 t of Al were produced in 1939; 1,278,000 t in 1950, and 2,600,000 t in 1955. Compared with 1939, the volume of Al production increased by a factor of 8.8 in the U.S.A. and 1.46 in Europe. By January 1, 1956, 18 aluminum and 7 alumina plants were in operation in the U.S.A. Mining of bauxites increased considerably on the island of Jamaica, which exported 2.6 mill. tons of it. Some estimate the Al requirements for the U.S.A. for 1957 at 4-4.5 mill. tons, while the demand of other capitalistic countries is evaluated at 2 mill. tons. New U.S.A. Al plants with

Card 1/2

137-58-5-9239

Some Data on the Present (cont.)

capacities of 700, 000 tons were in various stages of contruction during 1956.
I.G.

1. Aluminum--Production
2. Aluminum industry--Effectiveness

Card 2/2

Perkins *11/1*

AUTHORS: Bershteyn, Ya.A. and Purits, M.F. 136-58-3-20/21

TITLE: The first aluminium works in Africa (Pervyy alyuminiyevyy zavod v Afrike)

PERIODICAL: Tsvetnyye Metally, 1958. Nr.3. pp. 90-93 (USSR)

ABSTRACT: An account is given of a new aluminium works in the French Cameroons. The article is based on non-Slavic sources of information. There are 6 figures and 7 non-Slavic references.

AVAILABLE: Library of Congress.

1. Aluminum industry-Africa

Card 1/1

SHAKIROV, Salikhzyan; PURITS, N.Ya., red.; MIRZOYEVA, V.M., red.

[EVP-1 electronic computing attachment to the T-5MV
tabulator] Elektronnaia vychislitel'naia pristavka
EVP-1 k tabuliatoru T-5MV. Moskva, Statistika, 1965.
77 p. (MIRA 19:1)

SIVKOV, Mikhail Vasil'yevich; PURITS, N.Ya., red.; USTIYANTS,
I.A., red.

[Electronic multiplying and computing attachments to
T-5MU and T-MV tabulators] Elektronnaia umnozhaiu-
shchaia i vychislitel'naia pristavki k tabuliatoru
T-5MU i T-MV Moskva, Statistika, 1965. 62 p.
(MIRA 18:8)

POLETAYEV, V.I., преподаvatel'; PURITS, Ya.M., преподаvatel', red.

[Program of a course on "Safety engineering and fire prevention" for technical schools in electric engineering (a course of 57 hours)] Программа курса "Техника безопасности и противопожарная техника" для электромеханических техникумов (Объем курса 57 часов). Москва, 1956. 11 p. (MIRA 11:8)

1. Russia (1923- U.S.S.R.) Министерство электротехнической промышленности. Управление учебными заведениями. Методическое бюро. 2. Novocherkasskiy elektromekhanicheskiy tekhnikum (for Poletayev). 3. Moskovskiy elektromekhanicheskiy tekhnikum imeni L.B. Krasina. (for Purits). (Industrial accidents)